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Substitute for form 1449/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

1

of

5

Complete if Known

Application Number	10/654,790
Filing Date	9/4/03
First Named Inventor	Pan
Art Unit	2818
Examiner Name	M. Tran

Attorney Docket Number

### NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
MT	1	J.L. PAN, J.E. McMANUS, L. GROBER and J.M. WOODWALL, Gallium-arsenide deep-level pin tunnel diode with very negative conductance, Electronics Letters, Sept. 18, 2003, Vol. 39 No. 19	
	2	JANET L. PAN, JOSEPH E. MCMANIS, THOMAS OSADCHY, LOUISE GROBER, JERRY M. WOODALL and PETER J. KIDLIMANN, Gallium arsenide deep-leveloptical emitter for fibre optics, Nature Materials, June 2003, pp. 375-378, © 2003 Nature Publishing Group	
	3	JANET L. PAN, J.E. McMANIS, L. GROBER, J.M. WOODALL, Gallium-arsenide deep-level tunnel diode with record negative conductance and record peak current density, Solid-State Electronics 48, (2004), pp. 2067-2070, © 2004 Elsevier Ltd.	
	4	JANET L. PAN, Analytical method for finding the general optical properties of semiconductor deep centers, Journal of Applied Physics, Nov. 15, 2002, pp. 5991-6004, Volume 92, Number 10, © 2002 American Institute of Physics	
	5	JANET L. PAN, Optical emission from bound states of semiconductor deep-centers, Optics Express, Dec. 17, 2001, pp. 796-801, Vol. 9, No. 13, © 2001 OSA	
	6	S. FUKUSHIMA, K. MUKAI, N. OTSUKA, X-ray diffraction analysis of LT-GaAs's multilayer structures, Journal of Crystal Growth, 2002, pp. 1-5, © 2002 Published by Elsevier Science B.V.	
	7	G. M. MARTIN, M. L. VERHEIJKE and J.A.J. JANSEN, Measurement of the chromium concentration in semi-insulating GaAs using optical absorption, J. Appl. Phys. 50(1), Jan. 1979, pp. 467-471, © 1979 American Institute of Physics	
	8	J. SERRANO, A. WYSMOLEK, T. RUF, M. CARDONA, Spin-orbit splitting of acceptor states in Si and C, Physica B. 273-641 (1999) , pp. 640-643, © 1999 Elsevier Science B.V.	
	9	C.R. PIDGEON and R.N. BROWN, Interband Magneto-Absorption and Faraday Rotation in InSb, Physical Review, June 10, 1966, pp. 575-583, Volume 146, Number 2	
✓	10	G. MARTINEZ, A.M. HENNEL W. SZUSZKIEWICA, and M. BALKANSKI, Charge transfer Cr <sub>3</sub> +(3d3) Cr <sub>2</sub> +(3d4) in chromium-doped GaAs, Physical Review B, April 15, 1981, pp. 3920-3932, Volume 23, Number 8, © 1981 American Physical Society	

Examiner Signature		Date Considered	10/24/05
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<i>MH</i>	11	PETER C. SERCEL, AL. L. EFROS and M. ROSEN, Intrinsic Gap States in Semiconductor Nanocrystals, Physical Review Letters, Sept. 20, 1999, pp. 2394-2397, Volume 83, Number 12, © 1999 The American Physical Society				
	12	D.T.J. HURLE, Charged native point defects in GaAs and other III-V compounds, Journal of Crystal Growth, pp. 1-7, 2002 Published by Elsevier Science B.V., © 2002 Published by Elsevier Science B.V.				
	13	J.C. BOURGOIN, H. HAMMADI, M. STELLMACHER, J. NAGLE, B. GRANDIDIER, D. STIEVENARD, J.P. NYS, C. DELERUE, M. LANNOO, As antisite incorporation in epitaxial growth of GaAs, Physica B 273-274, 1999, pp. 725-728, © 1999 Elsevier Science B.V.				
	14	R. L. WEIHER and W.C. TAIT, Application of the Quantum-Defect Method to Optical Transitions Involving Deep Effective-Mass-Like Impurities in Semiconductors, Physical Review, Sept. 9, 1969, pp. 1116-1126, Volume 185, Number 3				
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	16	J. SERRANO, M. CARDONA, T. RUF, Spin-Orbit splitting in diamond: excitons and acceptor related states, Solid State Communications 113 (2000), pp. 411-414, © 2000 Elsevier Science Ltd.				
	17	D.E. BLISS, W. WALUKIEWICZ and J.W. AGER, III; E.E. HAULER, K.T. CHAN, S. TANIGAWA, Annealing studies of low-temperature-grown GaAs:Be, J. Appl. Phys. 71 (4), Feb. 15, 1992, pp. 1699-1707, 1992 American Institute of Physics, © 1992 American Institute of Physics				
	18	JAMES R. CHELIKOWSKY and MARVIN L. COHEN, Nonlocal pseudopotential calculations for the electronic structure of eleven diamond and zinc-blende semiconductors, Physical Review B, July 15, 1976, pp. 556-582, Volume 14, Number 2,				
	19	S.R. WHITE and L.J. SHAM, Electronic Properties of Flat-Band Semiconductor Heterostructures, Physical Review Letters, Sept. 21, 1981, pp. 879-882, Volume 47, Number 12, 1981 The American Physical Society, © 1981 The American Physical Society				
<i>V</i>	20	T. OBATA, S. FUKUSHIMA, T. ARAYA, N. OTSUKA, Photoluminescence of nearly stoichiometric LT-GaAs and LT-GaAs/A1As MQW, Journal of Crystal Growth 227-228 (2001), pp. 112-116, © 2001 Elsevier Science B.V.				

Examiner Signature	<i>Mauchew</i>	Date Considered	<i>10/24/05</i>
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<i>MH</i>	21	JUN-YUAN CHEN, JENN-GEE LO and LUKE SU LU, Optical Transitions via the Structure-Defect Levels Due to Lattice Vacancies in InSb, Japanese Journal of Applied Physics, June 1991, pp. 1169-1175, Vol. 30, No. 6			
	22	U. SIEGNER, M. HAIML, F. MORIER-GENOUD, R.C. LUTZ, P. SPECHT, E.R. WEBER, U. KELLER, Femtosecond nonlinear optics of low-temperature grown semiconductors, Physica B 273-274, 1999, pp. 733-736, © 1999 Elsevier Science B.V.			
	23	M.R. MELLOCH, J.M. WOODALL, and E.S. HARMON, Low-Temperature Grown III-V Materials, Annu. Rev. Mater. Sci., 1995, 25: 547-600, 1995 by Annual Reviews Inc.			
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	25	G.A. BARAFF and M.A. SCHLUTER, Electronic aspects of the optical-absorption spectrum of the EL 2 defect GaAs, Physical Review B, Apr. 15, 1992-I, pp. 8300-8309, Volume 45, Number 15, © 1992 The American Physical Society			
	26	JEROME FAIST, FEDERICO CAPASSO, DEBORAH L. SIVCO, CARLO SIRTORI, ALBERT L. HUTCHINSON; ALFRED Y. CHO, Quantum Cascade Laser, Science, New Series, Apr. 22, 1994, pp. 553-556, Volume 264, Issue 5158, © 1994 American Association for the Advancement of			
	27	JEROME FAIST, FEDERICO CAPASSO, CARLO SIRTORI, DEBBIE SIVCO, ALBERT L. HUTCHINSON, SUNG-NEE G. CHU and ALFRED Y. CHO, Mid-infrared field-tunable intersubband electroluminescence at room temperature by photon-assisted tunneling in couple-quântum wells, Appl. Phys. Lett. 64 (9), Feb. 28, 1994, pp. 1144-1146, © 1994 American Institute of Physics			
	28	B. GRANDIDIER, HUAJIE CHEN, and R.M. FEENSTRA; D.T. McINTURFF; P.W. JUODAWLKIS and S.E. RALPH, Scanning tunneling microscopy and spectroscopy of arsenic antisites in low temperature grown InGaAs, Applied Physics Letters, Mar. 8, 1999, pp. 1439-1441, Volume 74, Number 10, © 1999 American Institute of Physics			
	29	R.M. FEENSTRA, J.M. WOODALL and G.D. PETIT, Observation of Bulk Defects by Scanning Tunneling Microscopy and Spectroscopy: Arsenic Antisite Defects in GaAs, Aug. 23, 1993, pp. 1176-1179, Volume 71, Number 8, © 1993 The American Physical Society			
<i>V</i>	30	R.M. FEENSTRA, Cross-sectional scanning tunnelling microscopy of III-V semiconductor structures, Semicond. Sci. Technol. 9, 1994, pp. 2157-2168, © 1994 IOP Publishing Ltd. (Printed in UK)			

Examiner Signature	<i>Al. Tran</i>	Date Considered	<i>10/24/05</i>
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<i>MK</i>	31	G.M. MARTIN, Optical assessment of the main electron trap in bulk semi-insulating GaAs, Appl. Phys. Lett 39(9), Nov. 1, 1981, pp. 747-748, © 1981 American Institute of Physics			
	32	R. ERRIQUE VITURRO, MICHAEL R. MELLOCH, JERRY M. WOODALL, Optical emission properties of semi-insulating GaAs grown at low temperatures by molecular beam epitaxy, Appl. Phys. Lett. 60(24), June 15, 1992, pp. 3007-3009, © 1992 American Institute of Physics			
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	35	PETER C. SERCEL and KERRY J. VAHALA, Analytical formalism for determining quantum-wire and quantum-dot band structure in the multiband envelope-function approximation, Physical Review B, Aug. 15, 1990-II, pp. 3690-3710, Volume 42, Number 6, © 1990 The American Physical Society			
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	38	EVAN O. KANE, Band Structure of Indium Antimonide, J. Phys. Chem. Solids., Vol. 1, pp. 249-261, Pergamon Press 1957			
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<i>V</i>	40	G.A. BARAFF, Stress splitting of the EL2 zero-phonon line: Need for reinterpretation of the main optical transition, Physical Review B, May 15, 1990-I, pp. 9850-9859, Volume 41, Number 14, © 1990 The American Physical Society			

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<i>MTC</i>	41	SOKRATES T. PANTELIDES, The electronic structure of impurities and other point defects in semiconductors, Reviews of Modern Physics, Oct. 1978, pp. 797-858, Vol. 50, No. 4, © 1978 American Physical Society			
<i>MTC</i>	42	T.C.L.G. SOLLNER, E.R. BROWN, W.D. GOODHUE, and H.Q. Le, Observation of millimeter-wave oscillations from resonant tunneling diodes and some theoretical considerations of ultimate frequency limits, Appl. Phys. Lett. 50(6), Feb. 9, 1987, pp. 332-334, © 1987 American Institute of Physics			
<i>MTC</i>	43	S. AHMED, M.R. MELLOCH, E.S. HARMON, D.T. McINTURFF, and J.M. WOODALL, Use of nonstoichiometry to form GaAs tunnel junctions, Appl. Phys. Lett. 71 (25), Dec. 22, 1997, pp. 3667-3669, © 1997 American Institute of Physics			
<i>MTC</i>	44	E.R. BROWN, C.D. PARKER and T.C.L.G. Sollner, Effect of quasibound-state lifetime on the oscillation power of resonant tunneling diodes, Appl. Phys. Lett. 54 (10), Mar. 6, 1989, pp. 934-936, © 1989 American Institute of Physics			
<i>MTC</i>	45	G. BREMOND, G. GUILLOT et A. NOUAILHAT, Spectres de sections efficaces absolues de photo-ionisation des ions de transition 3d dans InP, Revue Phys. Appl. 22 (1987), pp. 873-879			
<i>MTC</i>	46	M.R. MELLOCH, D.D. NOLTE, J.M. WOODALL, J.C.P. CHANG, D.B. Janes, and E.S. HARMON, Molecular Beam Epitaxy of Nonstoichiometric Semiconductors and Multiphase Material Systems, Critical Reviews in Solid State and Materials Sciences, 21(3) (1996), pp. 189-263, © 1996 by CRC Press, Inc.			

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